

## CLAIMS

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- 1 1. An apparatus, comprising:  
2 first circuit branch;  
3 second circuit branch, coupled to the first circuit branch in a current mirror  
4 configuration;  
5 an amplifier, coupled to the second circuit branch, comprising a scaled replica  
6 of the first branch and an output node; and  
7 an enable node coupled to the first circuit branch, the second circuit branch,  
8 and the post amplifier to indicate a first logical state at the output node if the first  
9 circuit branch is programmed and the second circuit branch is un-programmed and to  
10 indicate a second logical state at the output node if the first circuit branch is un-  
11 programmed and the second branch is programmed.

2. The apparatus of claim 1, further comprising:  
first, second, and third resistances each having one terminal coupled to a first voltage;  
first, second, and third current mirror devices, each having one terminal coupled to an opposite terminal of the first, second, and third resistances, respectively, the third current mirror device matching the first current mirror device, the first current mirror device coupled to the second current mirror device in a current mirror configuration; and  
first, second, and third loads each having one terminal coupled to an opposite terminal of the first, second, and third current mirror devices, respectively, a second

11 terminal coupled to a second voltage, the third load matching the first load, and a third  
12 terminal coupled to the enable node.

1 3. The apparatus of claim 2, further comprising a second branch output node  
2 coupled to the second branch and the first branch current mirror, a second branch  
3 output node potential to decrease if the second resistance increases relative to the first  
4 resistance and to increase if the second resistance decreases relative to the first  
5 resistance, an output node potential being equivalent to the second branch output node  
6 potential if the second resistance is equivalent to the first resistance.

1 4. The apparatus of claim 2, the amplifier further comprising a trip point to  
2 sufficiently track a potential on the first current mirror device terminal coupled to the  
3 first resistance.

1 5. The apparatus of claim 2, the amplifier further comprising a trip point to  
2 sufficiently track a potential on the first current mirror device terminal coupled to the  
3 first resistance and to trip the amplifier if the first resistance is approximately equal to  
4 the second resistance.

1 6. The apparatus of claim 2, the amplifier further comprising a trip point to  
2 sufficiently track a potential on the first current mirror device terminal coupled to the  
3 first resistance and to trip the amplifier if the potential on the first current mirror  
4 device terminal coupled to the first resistance is approximately equal to the second  
5 branch output node potential.

1 7. The apparatus of claim 2, further comprising the output node potential to be  
2 equivalent to the second branch output node potential if the first resistance is  
3 approximately equal to the second resistance.

1 8. The apparatus of claim 2, the first, second, and third resistances each further  
2 comprising a fuse element.

1 9. The apparatus of claim 1, the first, second, and third current mirror devices  
2 each further comprising p-channel material.

1 10. A resistance sense circuit, comprising:  
2 first circuit branch;  
3 second circuit branch coupled to the first branch in a current mirror  
4 configuration;  
5 an amplifier coupled to the second circuit branch, the amplifier comprising a  
6 load having it's gate coupled to a first voltage and it's source coupled to a second  
7 voltage, and an output node; and  
8 an enable node coupled to the first circuit branch and the second circuit branch  
9 to turn the current mirror on to enable the resistance sense circuit to indicate a logical  
10 state at the output node if an enable signal is asserted on the enable node, the first  
11 circuit branch is un-programmed and the second circuit branch is programmed.

1 11. The resistance sense circuit of claim 10, the output node further to indicate a  
2 value approximately equal to the first voltage if the enable signal is asserted and to  
3 indicate a value approximately equal to the second voltage if the enable signal is de-  
4 asserted.

1 12. The resistance sense circuit of claim 10, the first resistance further comprising  
2 a resistor and the second resistance further comprising a fuse element.

1 13. The resistance sense circuit of claim 10, further comprising:  
2 first input node coupled to the second circuit branch to program the second  
3 circuit branch with a first logical state; and  
4 second input node coupled to the first circuit branch to program the first circuit  
5 branch with a second logical state.

1 14. The resistance sense circuit of claim 10, further comprising:  
2 first resistance and second resistance each having one terminal coupled to a  
3 voltage;  
4 first and second current mirror device each having one terminal coupled to an  
5 opposite terminal of the first and second resistance, respectively, the first current  
6 mirror device coupled to the second current mirror device in a current mirror  
7 configuration;  
8 third current mirror device matching the first current mirror device, the third  
9 current mirror device having a gate coupled to a second circuit branch output node and  
10 a source coupled to the voltage; and  
11 first and second load each having one terminal coupled to an opposite terminal  
12 of the first and second current mirror device, respectively.

1 15. The resistance sense circuit of claim 14, further comprising:  
2 first input node coupled between the second current mirror device and the  
3 second resistance to program the second resistance with a first logical state; and

4 second input node coupled between the first current mirror device and the first  
5 resistance to program the first resistance with a second logical state.

1 16. An apparatus, comprising:  
2 a sense amplifier;  
3 a current mirror having a current mirror output node and a current mirror drain;  
4 and  
5 a differential amplifier coupled to the sense amplifier via the current mirror  
6 output node, the differential amplifier to change states if a potential on the current  
7 mirror output node is approximately equal to a potential on the current mirror drain.

1 17. The apparatus of claim 16, further comprising first resistance and second  
2 resistance coupled to a current mirror source.

1 18. The apparatus of claim 16, further comprising first resistance and second  
2 resistance coupled to a current mirror source, the first and second resistances  
3 comprising p-channel material.

1 19. The apparatus of claim 16, further comprising:  
2 first resistance coupled to a current mirror source;  
3 second resistance coupled to the current mirror source; and  
4 an enable node coupled to the current mirror drain to enable the differential  
5 amplifier to indicate a logical state at a differential amplifier output node if an enable  
6 signal is asserted on the enable node, the first circuit resistance is un-programmed and  
7 the second resistance is programmed.

1 20. The apparatus of claim 16, the differential amplifier further comprising a  
2 second current mirror output node coupled to an inverting input of the differential  
3 amplifier.

1 21. An apparatus, comprising:  
2 an amplifier having an output node; and  
3 a gain stage, coupled to the amplifier, having a trip point to track a potential on  
4 the output node.

1 22. The apparatus of claim 21, the amplifier comprising a sense branch coupled to  
2 a reference branch in a current mirror configuration.

1 23. The apparatus of claim 22, the gain stage comprising a scaled replica of the  
2 reference branch or the sense branch.

1 24. The apparatus of claim 22, further comprising first and second voltages each  
2 coupled to the amplifier and the gain stage.